

## Douglas public safety goal: Replace radio equipment and improve transmission coverage

By Matthew Wojcik  
Town Administrator

Advanced military aircraft use technology to escape detection and fool the tracking systems of weapons aimed at them. Video taken of Coalition planes attacking Iraqi targets during the Persian Gulf wars is a memory many share - the sky was full of glowing objects and Coalition pilots were posting extraordinary footage of successful bombing runs. Technology was counteracting technology; ultimately there is only so much that radar and heat seeking sensors can do when there is an active effort to foil them.

Technology can fail even when interference is unintentional. Objects that are about half the length of a radio wave can cause havoc if you're trying to talk on that frequency. A lot of radio communication occurs on frequencies that

are just about twice the length of a pine needle. Trees hold an impressive amount of water in their leaves, and water is unfriendly to radio waves. Don't forget heat... trees have an ambient temperature and that also plays games with radio. And while it is true that the physics can keep a radio connected inside a structure, eventually, the more confined a space becomes, and the thicker its walls, etc., the more difficult radio communication becomes, especially

at higher frequencies.

Technology is not invincible (yet). Understanding its limitations can explain public safety challenges. First responders must be able to talk to each other in order to protect and serve their community. Dropping a call on your cell phone is a nuisance; interference or poor coverage that incapacitates first responder radios can delay or prevent critical, life-saving communication.

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## RADIO TRANSMISSION

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Douglas has a great many trees, growing on low, rolling hills. There are many structures in town where radio coverage is insufficient, and, of course, they happen to be the buildings where there are concentrations of people of all ages. Several attempts have been made over the last ten to fifteen years to

improve the town's public safety radio infrastructure. Things are definitely better, but there are still gaps in coverage, and we have three different radio networks all over the spectrum.

Some of that spectrum is being taken away. Too much money gets spent keeping all the systems operating. Buying radios that enable talk across different bands is expensive. Since all the systems we have rely on one

high spot in town, we don't have the redundancy or resiliency that an emergency radio system needs to have.

Last year, Town Meeting approved a capital budget that included replacement of the mobile and portable radios used across four different departments. But before spending any of the funds, the chiefs and department heads made sure that the project was not throwing good money af-

ter bad. The result of their research is that the Town needs to address radio coverage as well as equipment. Adding two high transmission locations, on structures that already exist and using distinct power supplies, will bring Douglas up to a modern standard for public safety communication. This conversation will be ongoing, but its successful final resolution will be essential.